



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
[www.uspto.gov](http://www.uspto.gov)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/738,402	12/17/2003	Xiaohong Gayden	GP-303509	8007
7590	04/27/2006		EXAMINER	
Kathryn A. Marra General Motors Corporation 300 Renaissance Center Mail Code 482-C23-B21, P.O. Box 300 Detroit, MI 48265-3000			JOHNSON, JONATHAN J	
		ART UNIT	PAPER NUMBER	
		1725		
DATE MAILED: 04/27/2006				

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/738,402	GAYDEN ET AL.	
	Examiner Jonathan Johnson	Art Unit 1725	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

1) Responsive to communication(s) filed on 23 February 2006.

2a) This action is FINAL.                    2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

4) Claim(s) 1-20 is/are pending in the application.

4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.

5) Claim(s) \_\_\_\_\_ is/are allowed.

6) Claim(s) 1-20 is/are rejected.

7) Claim(s) \_\_\_\_\_ is/are objected to.

8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) All    b) Some \* c) None of:  
 1. Certified copies of the priority documents have been received.  
 2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413)
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	Paper No(s)/Mail Date. _____
3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____	5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)
	6) <input type="checkbox"/> Other: _____

**DETAILED ACTION*****Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-15 and 18-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's Admitted Prior Art (AAPA) in view of US 2,906,006 (Neal) and US 3,334,398 (Middleton). AAPA teaches providing a first sheet of material having a first bonding face and a first outer face and a second sheet of material having a second bonding face and a second outer face (specification, paragraph 2); bonding said first and second sheets together (specification, paragraph 4); applying a conductive coating onto said first and second outer face (specification, paragraph 2). Neal teaches creating a plurality of patterned areas using an antibonding material on at least one of said first bonding face and said second bonding face injecting fluid between said first and second sheets thereby causing the first sheet to project outward at said plurality of patterned areas wherein a first fluid path is defined on said outer face and wherein a second fluid flow path is defined between the first and second sheets at said plurality of patterned area (col. 3, ll. 65-70 and col. 4, ll. 5-60, where at the first, second, and third flow paths the first and second sheets are projected outwards) and imposing a force onto at least one of said first and second outer face thereby joining said first and second sheets at said bonding area (col. 4, ll. 1-60), where the thickness after pressure bonding would necessarily be less than the pre-bonding

Art Unit: 1725

thickness; placing said first and second bonded sheets into a die having spaced apart first and second boundaries; and injecting fluid between said first and second bonded sheets whereby extension portions contact one of said first and second boundaries so as to form a flat surface thereat (col. 6, ll. 1-20); wherein injecting fluid between said first and second sheet includes forming a flow channel between said first and second sheet (col. 6, ll. 1-20); roll bonding said first and second sheet together (col. 5, ll. 70-75); where the antibonding material is graphite (col. 5, ll. 35-40). Middleton teaches a first and second flow path not connecting (figure 4, items 17 and 18). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the heat exchanger of AAPA to utilize the particular stop off, pressure bonding, and subsequent fluid pressure in order to reduce the overall manufacturing complexity and cost (see Neal col. 1, ll. 15-60) and to modify the combined invention of AAPA and Neal to utilize a first and second flow path that do not connect in order to form a desired system of passageways (see Middleton col. 1, ll. 45-55).

Claims 1-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's Admitted Prior Art (AAPA) in view of US 2,906,006 (Neal) and US 4,080,702 (Chatfield). AAPA teaches providing a first sheet of material having a first bonding face and a first outer face and a second sheet of material having a second bonding face and a second outer face (specification, paragraph 2); bonding said first and second sheets together (specification, paragraph 4); applying a conductive coating onto said first and second outer face (specification, paragraph 2). Neal teaches creating a plurality of patterned areas using an antibonding material on at least one of said first bonding face and said second bonding face injecting fluid between

said first and second sheets thereby causing the first sheet to project outward at said plurality of patterned areas wherein a first fluid path is defined on said outer face and wherein a second fluid flow path is defined between the first and second sheets at said plurality of patterned area (col. 3, ll. 65-70 and col. 4, ll. 5-60, where at the first, second, and third flow paths the first and second sheets are projected outwards) and imposing a force onto at least one of said first and second outer face thereby joining said first and second sheets at said bonding area (col. 4, ll. 1-60), where the thickness after pressure bonding would necessarily be less than the pre-bonding thickness; placing said first and second bonded sheets into a die having spaced apart first and second boundaries; and injecting fluid between said first and second bonded sheets whereby extension portions contact one of said first and second boundaries so as to form a flat surface thereat (col. 6, ll. 1-20); wherein injecting fluid between said first and second sheet includes forming a flow channel between said first and second sheet (col. 6, ll. 1-20); roll bonding said first and second sheet together (col. 5, ll. 70-75); where the antibonding material is graphite (col. 5, ll. 35-40). Chatfield teaches a heat exchanger design having three passageways that do not connect (figure 4, item 25). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the heat exchanger of AAPA to utilize the particular stop off, pressure bonding, and subsequent fluid pressure in order to reduce the overall manufacturing complexity and cost (see Neal col. 1, ll. 15-60) and to modify the combined invention of AAPA and Neal to utilize three flow paths that do not connect in order to provide an efficient heat exchanger (see Chatfield, col. 1, ll. 5-65).

Art Unit: 1725

***Response to Arguments***

Applicant's arguments with respect to claims 1-20 have been considered but are moot in view of the new ground(s) of rejection.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jonathan Johnson whose telephone number is 571-272-1177. The examiner can normally be reached on M-Th 7:30 AM-5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Pat Ryan can be reached on 571-272-1292. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Jonathan Johnson  
Primary Examiner  
Art Unit 1725

jj